

CLAIMS

1. A fluorescent conversion medium comprising:

fluorescent particles comprising semiconductor
5 nanocrystals, the particles absorbing visible light to emit
fluorescence of a different wavelength,

a transparent medium holding the fluorescent particles
dispersed therein, and

satisfying $0.4 < C \cdot d/r^3 < 5.0$

10 wherein r is the average diameter (unit: nm) of the fluorescent
particles, d is the film thickness (unit: μm) of the fluorescent
conversion medium, and C is the volume ratio (unit: vol%) of
the fluorescent particles to the fluorescent conversion medium.

15 2. The fluorescent conversion medium according to claim 1,
wherein a bulk material used for the semiconductor nanocrystals
has a band gap of 1.0 to 3.0 eV at 20°C.

3. The fluorescent conversion medium according to claim 1,
20 wherein the fluorescent particles are core/shell semiconductor
nanocrystals comprising a core particle made of a semiconductor
nanocrystal and a shell layer made of a second semiconductor
material having a larger band gap than the band gap of the
semiconductor material used for the core particle.

25

4. The fluorescent conversion medium according to claim 3,
wherein the transparent medium is a resin, and the surface of

the shell layer is subjected to a compatibility-treatment to enhance the affinity to the resin.

5. A fluorescent conversion substrate comprising;
5 a transparent support substrate, and
a fluorescent conversion part provided on the transparent support substrate, the part comprising the fluorescent conversion medium according to claim 1.
- 10 6. A color light emitting apparatus comprising;
a light source emitting visible light, and
a fluorescent conversion part receiving the light from the light source to emit fluorescence of a longer wavelength, the part comprising the fluorescent conversion medium according
15 to claim 1.
7. The color light emitting apparatus according to claim 6, wherein the fluorescent conversion part is a multilayer structure of the fluorescent conversion medium and a color filter, the
20 color filter transmitting light in a wavelength region of the fluorescence from the fluorescent conversion medium, and cutting off light in the other wavelength region.
8. A color light emitting apparatus comprising;
25 a light source emitting at least blue light, and
a fluorescent conversion part comprising pixels of red (R), green (G) and blue (B), the part receiving light from the

light source to emit red, green or blue light,
the pixels of red (R) and green (G) comprising the
fluorescent conversion medium according to claim 1, and
the pixel of blue (B) comprising a color filter.

5

9. A color light emitting apparatus comprising;
a light source emitting at least blue light, and
the fluorescent conversion medium according to claim 1
receiving light from the light source to emit light in at least
10 one color ranging from green to red and transmit part of the
blue light emitted from the light source.

10. The color light emitting apparatus according to claim 6,
8 or 10, wherein the light source is an organic electroluminescent
15 device,

the organic electroluminescent device comprising,
a first light-reflective electrode,
a second transparent electrode, and
an organic luminescent medium comprising an organic
20 emitting layer between the first and second electrodes.